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RTD TODAY

Resources and Technology Division
Economic Research Service
U.S. Department of Agriculture, Washington, DC

A newsletter for employees
and colleagues of RTD

AUGUST-SEPTEMBER 1991

FROM THE DIRECTOR'S OFFICE

I would like to elaborate on a recent talk I made to the ERS Chapter of the Organization of Professional Employees of the Department of Agriculture (OPEDA) on our continuing responsibility to the Workplace Community. The Workplace Community includes all of our staff, from the clerk typists to the Division Directors. We spend nearly as many hours a week with our ERS colleagues as we do with our families. Thus, it is in everyone's interest to create a supportive work environment. RTD has been involved in a number of activities directed at Workforce Diversity issues over the last 6 months. I am committed to Workforce Diversity and, more generally, the Workplace Community for several reasons.

First, improved working relationships in a culturally diverse setting are right. An event like the recent tragic death of our colleague, Rhona Lantin, serves to remind us how much "people do matter" and how important personal relationships in the workplace are to us. Second, a review of the future demographics in the workplace indicates that diversity in the workplace is inevitable and the right course is to prepare for it. Finally, the case is strong that seizing the opportunity of diversity is the productive thing to do.

People are clearly ERS' most important resource. Eighty-two percent of our budget, for example, is committed to salaries and benefits. It is also a fact that the system inadvertently dichotomizes the Workplace Community. We are divided by organizational units, Division, Branches, Sections; by personnel grades; by demographics, city, suburban, rural; by function, support vs research vs supervisory; and by race, culture, ethnicity, and gender.

It is my belief and commitment, however, that we can overcome these dichotomies and work together to create a mutually supportive and productive Workplace Community. The ingredients to create this community include (1) Sensitivity by all, (2) Improved communications, (3) Better listening skills, (4) Focused training (personal and professional growth, management, and sensitivity).

How do we begin? Working with Ben Alexander and Associates, a personnel consulting group, RTD held a Managing Diversity Workshop for supervisors last February. The goal of the workshop was to increase supervisors' sensitivity when interacting with employees whose background differs from their own background. As a follow-up to the Workshop, Ben had meetings with four focus groups representing a cross-section of Division staff. The focus groups addressed the following issues: (1) What is working well in relationships?

FOOTNOTE: RTD Branch and other units are abbreviated in this letter, as follows:

Office of the Director (OD), Agricultural Inputs and Production Systems Branch (AI&PS), Land and Capital Assets Branch (L&CA), Resource Policy Branch (RP), Water Branch (W), and Resource Indicators Branch (RI).

(2) What is not working well? (3) What would you like to see management start, stop, or continue? and (4) Do you see race or gender involved in these themes? The focus groups provided an opportunity for employees to voice their views.

At the RTD Planning Retreat in June we had a half day session with Ben that involved a summary of the responses of the focus groups and a short strategic planning exercise. In reflecting on Ben's draft report, I am reminded of the importance of the idea that "Perceptions are reality". In looking ahead we need to address at least two key barriers identified by Ben (1) "Learned insensitivity" on the part of managers and research staff and (2) "Learned helplessness" on the part of the support staff.

At this point RTD is prepared to move from mere awareness to meaningful action. In my view this will require effective cultural change to address "learned insensitivity" and "learned helplessness". Everyone will have to be involved and everyone will have to assume responsibility for individual growth and development. Change will require many small steps. The commitment to change must be reflected through improved communications. We have already increased the number of meetings of staff throughout the organization to facilitate the flow of information. We have initiated a weekly newsletter to communicate events and personal information among the staff. The mentoring system, which was initiated for summer interns this year, has been expanded to include new permanent staff and we need to do more. Your input and suggestions are truly welcomed.

We need to explore further the opportunities for personal and professional growth. Establishing Branch Office Manager positions within RTD created opportunities for expanding the responsibilities and skills of our support staff; other possibilities are being explored. We also need more broad-based sensitivity, technical, and management training. I strongly believe that growth and opportunity for advancement are key elements in continuing to improve our Workplace Community.

During the focus group interviews Ben Alexander found that RTD employees felt positive about the contribution and importance of RTD work products. We can all be proud of the improvements that we have made and are making in our Workplace Community. With your suggestions, cooperation, and goodwill, we can make RTD even better, but I do need your help. In conclusion, we do care very deeply about each and every employee in RTD, and that commitment will be demonstrated by continually improving communication, listening, and problem-solving. I would ask again that in our daily working relationships we each take those extra few moments to completely listen to the other person's point of view before reaching conclusions. My door is open to any and all thoughts and observations that you might want to share.



JOHN A. MIRANOWSKI

PROGRAM HIGHLIGHTS

RTD'S WESTERN WATER RESEARCH PROGRAM: AN EMPHASIS ON FEDERAL POLICY OPTIONS

For over a decade, commentators on western water use have described the beginning of an era of surface water *reallocation*: physical limits to additional water supply, combined with increasing non-agricultural water demands, create economic incentive and political pressure for water transfers from old to new uses. Since irrigated agriculture constitutes 80 to 90 percent of western water consumption, water reallocation necessarily implies irrigation water conservation.

The critical issue associated with irrigation water conservation involves choosing among alternative *methods* of achieving conservation. Among the feasible methods are voluntary market transfers of water rights, quantity-based regulation that reduces the volume of existing rights, price-based regulation to increase water prices and reduce use, and subsidies to induce adoption of more efficient irrigation technology. More specifically, Federal policy choices include deregulation of interstate water markets, deregulation of voluntary transfers of Reclamation water rights, reform of Reclamation water supply pricing, and maintenance of critical riparian habitat for endangered fish species.

RTD researchers are continuing a research program focused on assessing the effect on irrigated agriculture of various Federal water policy choices. Michael Moore (Water Branch) and Donald Negri (Willamette University) conducted research on the crop production impacts of U.S. Bureau of Reclamation water supply reductions. Reclamation water projects supply surface water to roughly 10 million acres in the 17 western States (one-quarter of the region's irrigated acreage). The research involved econometric analysis of the effect of Reclamation water supply on cropland allocation decisions. Two key findings emerged. One, cropland allocation elasticities with respect to Reclamation water supply generally are inelastic. Thus, the crop production adjustments would be relatively minor given moderate water supply reductions. Two, despite the elasticities, production changes for rice, vegetables, and fruit and nut crops could be sufficiently large to affect national market prices. Reclamation-supplied farms produce 10 to 40 percent of the national production of these crops. The research estimated that, through the production and substitution impacts, a long-term 10 percent water supply reduction would increase the rice price by 5 percent and vegetable prices by 1 percent, but would reduce fruit and nut prices by 3 percent.

Reclamation policy can direct the extent to which market incentives, water prices, and water conservation regulations affect reallocation of Reclamation water from agriculture to other sectors. An article by Moore, "The Bureau of Reclamation's New Mandate for Irrigation Water Conservation: Purposes and Policy Alternatives," Water Resources Research (February 1991), describes possible purposes of a Reclamation water conservation policy and analyzes alternative impacts of implementing different policy options. Two findings are that price-based regulation may not produce widespread conservation and that conservation policy instruments should be chosen with reference to their ability to achieve the purposes of a Federal water conservation policy. For example, if an environmental quality standard is the policy purpose, sole reliance on water markets may not achieve the environmental quality goal.

Other RTD research focuses on the role of irrigation technology adoption in irrigation water conservation. An article by Glenn Schaible and C. S. Kim (Water Branch) and Norman K. Whittlesey (Washington State University), "Water Conservation Potential from Irrigation Technology Transitions in the Pacific Northwest," Western Journal of Agricultural Economics (forthcoming: December 1991), indicates that, in the absence of policy mandates or sizeable real crop price increases, water conservation impacts through adjustments in irrigation technology and producer water management will be relatively small.

Econometric analysis is used to examine the effect of real crop price changes on irrigation technology adjustments and the resulting agricultural water conservation. The findings indicate that irrigation technology shifts by year 2005 will result in increased annual conserved water quantities of only 3.3 to 3.9 percent of 1988 agricultural water use, assuming a 30 percent increase in the historical average annual real price changes for wheat, alfalfa, and energy. The inability of market forces to transmit information to the agricultural sector on

the increasing scarcity value of western water resources has resulted in market indicators (relative prices) playing a reduced role in the past in promoting water-use efficiency/conservation in agriculture. Finally, because agriculture constitutes the significant proportion of western water consumption and relative market prices fail to capture water's scarcity value, conservation incentive-oriented water policies will be needed to promote adoption of water conserving technologies to acquire any significant gains in agricultural water conservation for reallocation. Conservation incentive-oriented water policies may need to involve investment subsidies and/or institutional changes (for example, rights to conserved water).

Four researchers in the Water Branch (Marcel Aillery, Noel Gollehon, Moore, and Schaible) are completing the initial development phase of a mathematical programming model of western agriculture. The model--the Western Agricultural Water Analysis (WAWA) model--is designed to compare the cost efficiency and distributional consequences on agriculture of alternative water conservation policies. The WAWA model's relative strength will be analysis of policies that would affect the major river basins of the West, including deregulated interstate water markets, Reclamation policy reform, and general water conservation policy analysis.

Specific model components facilitate this type of policy analysis. First, the 17 western States are divided into 61 geographic areas in the model. Boundaries of the areas are defined by the intersection of hydrologic and State boundaries, thus making feasible an analysis of interstate water marketing policies. Second, Reclamation-served agricultural production within each area is modelled separately from other agricultural production. This permits comparison of Reclamation water price increases and quantity-based regulation. Third, the cost structure of agricultural production activity is defined uniformly across geographic areas using consistent data bases. This enables comparative analysis of conservation subsidy policies, such as subsidy of irrigation technology investments versus price-based or quantity-based regulatory policies. An ERS Technical Bulletin documenting the WAWA model is planned for 1992.

EVENTS AND ACTIVITIES

EC-U.S. Biotechnology Meeting

Margriet Caswell, Leader of the Agricultural Research and Technology Assessment Section, represented ERS at the Second Meeting of the EC-U.S. Task Force on Biotechnology Research held in Brussels, Belgium. The Task Force was established by Allan Bromley, the President's Science Adviser, and Fillippo Pandolff, Vice President of the European Communities. The meeting was co-chaired by USDA Assistant Secretary Charles Hess and Director General of Science Research and Development, Paolo Fasella.

The purpose of the meeting was to share scientific information and approaches in order to facilitate the timely and safe development of biotechnology products. The six areas of discussion for the meeting were: (1) Public understanding, attitudes, and information concerning biotechnology; (2) Biosafety research; (3) Genome analysis; (4) Training in biotechnology research; (5) Applications of biotechnology to toxicological testing; and (6) Data banks and collection.

Caswell presented a paper "Economic Research on the Effects of Biotechnology in Market Economies." She and Mark Cantley, the Head of the Concertation Unit for Biotechnology in Europe, Directorate-General for Science Research and Development, were appointed co-chairs of a committee to explore possibilities for (1) using socio-economic assessments of new technologies in a non-regulatory framework, and (2) a closer harmonization of such assessment methods between the European Community and the United States.

Chemical Use Surveys

The Presidential Initiatives for Water Quality and Food Safety have strengthened USDA's survey and research activities related to on-farm use of fertilizers and pesticides. The 1991 chemical use surveys will represent

two-thirds of the nation's annually planted crop acreage and offer opportunities to research a number of issues including water quality, food safety, and pesticide exposure.

Field crop surveys in 1991 were expanded to include grain sorghum and peanuts as well as additional production States for corn, soybeans, and wheat. The surveys represent 90% of the U.S. corn and soybean acreage and from 65% to 85% of the wheat, cotton, rice, potatoes, sorghum, and peanut acreage. The sample size for the 1991 surveys was increased to improve the statistical quality of the estimates. The survey should allow estimates of treated acreage and application rates for any pesticide product applied on greater than 5% of the commodity acreage in a surveyed State.

Farmers in fourteen States will be surveyed to determine chemical use on fruit, nut, and berry crops as well as to obtain information on any other practices they use to control pests. The survey collects production, marketing, labor, and other economic information and represents 85% or more of the acreage of citrus, grapes, cherries, and plums, 75% of the apples, and about 70% of peaches, pears, and raspberries.

In 1990, producers in the DelMarVa peninsula were surveyed for in-depth research on how farming practices may affect water quality. Over the next few years a total of twelve areas throughout the country are expected to be studied in a coordinated effort by USDA, EPA, and USGS. In 1991, surveys are being conducted in the Columbia River Basin (Washington), Central Nebraska Basin, White River Basin (Indiana), and Lower Susquehanna Basin (Pennsylvania). The results from these surveys will be linked with water quality monitoring activities, resource studies, and other information to research water quality issues.

A pilot survey of chemical use on cotton was conducted in 1989 to measure the quantities of pesticides applied to cotton and related economic information to facilitate research on potential relationships between resources, economic conditions, and chemical use. Some of the research results stemming from this effort are published in an ERS Staff Report, Cotton Production and Water Quality: An Initial Assessment (AGES 9105). In 1990, pesticide use data were collected for wheat, corn, soybeans, rice, and potatoes as well as cotton. A survey of chemical use on vegetables and economic characteristics of vegetable producers was conducted in four States for the 1990 production season. Statistical estimates from the 1990 surveys were recently published in a new Agricultural Chemical Use series by the National Agricultural Statistic Service.

Environmental Issues--Food Review

The most recent issue of Food Review tackles a somewhat different theme in exploring some of the economic-environmental relationships involved in producing, processing, and transporting food. Contributions from RTD include "Pesticides: How Safe and How Much?" by John Schaub, Chief of the Agricultural Inputs and Production Systems Branch (AI&PS) and "The Delaney Clause: New Interpretations" by Philip Szmedra and Walter Ferguson also of AI&PS. Catherine Greene of CED's Specialty Agriculture Branch authored "Environmental Concern Sparks Renewed Interest in IPM."

Steve Crutchfield Leader of the Environmental Quality Valuation Section discusses "Agriculture and Water Quality Conflicts" and Jim Hrubovcak Leader of the Resource Adjustments Section, "Ethanol in Agriculture and the Environment", both topics high on USDA's current policy agenda.

Other contributors include Luanne Lohr(Michigan State University), "Managing Solid By-Products of Industrial Food Processing"; Dieter Fishcher (Appropriate Technology International), "Refrigerated Transportation: CFC's and the Environment"; and Robert F. Testin and Peter J. Vergano (Clemson University), "Food Packaging".

The Food Review issue illustrates the importance of environmental issues with processes throughout the food system. The Review is published quarterly by ERS and is targeted to firms and individuals in the food sector ranging from consultants to agribusiness managers.

PEOPLE

Welcome to ...

- Carol S. Kramer (OD), formerly Fellow and Head of the Food and Nutrition Policy Program, National Center for Food and Agricultural Policy, Resources for the Future, who joined RTD as Associate Director.
- Neil Hohmann (L&CA), B.A. in Economics, Yale University, who joined the Resource Adjustments Section.
- Sharon Jans (AI&PS), M.S. in Food and Resource Economics, University of Florida, who joined the Agricultural Chemicals and Risk Assessment Section.
- Michael Ollinger (AI&PS), Ph.D. in Economics from Washington University, who joined the Input Supply and Demand Section.
- Richard Quiroga (RP), Ph.D. in Agricultural Economics from the University of Connecticut, who is a Visiting Scholar in the Domestic and Agricultural Policy Section.

Appointment Changes

- John Reilly (OD), who has been named Chief of the Land and Capital Assets Branch.

Farewell to

- Kazim Konyar (RP), who accepted a position as Assistant Professor, California State University, San Bernardino.

Our Summer Interns

- Stacy Baines (L&CA), who returned to Spelman College.
- Janine Butz (RI), who returned to Cornell University
- Paul Holchak (L&CA), who returned to the University of Texas--Austin.
- Melissa Lawrie (RI), who graduated from Spelman College, returned to her home in New Jersey.
- Jennifer Lewis (RI), who returned to Spelman College.
- Jennifer Libby (W), who is a Presidential Management Intern in the Department of Transportation.
- Kelly Simonson (L&CA), who returned to Northern Iowa University.
- Ashok Srinivasan (RP), who returned to Carnegie Mellon University.
- Eric Thurber (OD), who returned to the University of Nebraska.

Congratulations to

- Louise Arthur, former Natural Resource Economics Division employee, who has been elected President of the Canadian Agricultural Economics and Farm Management Society.

PUBLICATIONS

(October 1990 - September 1991)

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Ferguson, Walter and Philip Szmedra (Eds.). Pesticide Residues and Food Safety: Aspects of a Changing Structure. ERS Staff Report No. AGES 9110. February 1991. 43 pp.

Frisvold, George B. Endogenous Technological Change in U.S. Agriculture: A Direct Test of the Induced Innovation Hypothesis. Technical Bulletin No. 1790. May 1991. 19 pp.

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Larson, Bruce and Mary Knudson. Public Regulation of Agricultural Biotechnology Field Tests: Economic Implications of Alternative Approaches. Technical Bulletin No. 1793. August 1991. 19 pp.

Jones, John and Roger Hexem. Cash Rents for Farms, Cropland and Pasture, 1960-89. Statistical Bulletin No. 813. October 1990. 43 pp.

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James Hauver
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Periodicals

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Leonard Bull
Stan Daberkow
Marlow Vesterby

Herman Delvo
Mohinder Gill

Harold Taylor
Noel Uri

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Patrick Canning
J. Peter De Braal

John Jones
Felix Llacuna

Fred Kuchler

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Marcel Aillery
William Crosswhite
Stephen Crutchfield

Clifford Dickason
Art Daugherty
Noel Gollehon

Ralph Heimlich
John Hostetler
Richard Magleby

C.T. Osborn
Bill Quinby
Carmen Sandretto

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- Crosswhite, William and Carmen Sandretto. **Trends In Resource Protection Policies In Agriculture.** Agricultural Resources: Cropland, Water, and Conservation. Situation and Outlook Report No. 24. September 1991.
- Crutchfield, Stephen. **Agriculture and Water Quality Conflicts.** Food Review. Vol. 14, No. 2. ERS, USDA. April-June 1991. pp. 12-14.
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- Gertel, Karl and John Jones. **Returns to Cash Rented Farmland and Common Stock, 1940-1990.** Agricultural Resources: Agricultural Land Values. Situation and Outlook Report No. AR-22. June 1991. pp. 38-44.
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- Gollehon, Noel. **California Growers Face Drought.** Agricultural Outlook. AO-172. ERS, USDA. March 1991. pp. 26-28.
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- Brazee, Richard J. **Review** of M. D. Bowes and J. V. Krutilla. Multiple Use Management: The Economics of Public Forestland. Resources for the Future. 1989, in American Journal of Agricultural Economics. Vol. 73, No. 1. February 1991. pp. 222-223.
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